# America's Great Electrical Power. In the state of the big city. But while only a beginning has been made as yet in harnessing

Dynamos of United States as Strong as 26,000,000 to steam engines, and the newest, fitted horsepower-at Niagara is not only the ers are given on the subject of the pro-30,000,000 Horses-Heads the List of Nations.

By DEXTER MARSHALL,

at least sixteen millions of horses to do the work now being done by the electric electricity is now applied in this country. Less conservative experts say that twenthe beginning of the experiment.

able for work at any one time

According to T. Commerford Martin, the well-known expert writer on electrical topics, the dynamos of the country to-day are developing more than 8,000,000 effective horsepower regularly. This estimate probably is within the limit. In 1902, when the United States Census Bulletin on electric power was issued, the returns showed that 1,624,980 horsepower was then being developed for the operation of public electric lighting and miscellaneous power, while 1,159,062 horsepower was being used in the operation of street and other electric railroads. In the five years since then the increased development of public electric light and power stations is estimated at 97 per cent; of electric railroad power, 40 per cent. Thus the present development for electric light and miscellaneous purposes is now 3,209,325 horsepower, and of electric railroads, 1,632,602 horsepower.

Private Plants Not Included.

These figures do not include private plants in the country, of which there are about 50,000, developing as much power, in the aggregate, Mr. Martin thinks, as the public light and power stations, or nearly three and a quarter million horsepower. In all, to approximate exactness, the electrical development may be estimated at 8,052,000 horsepower at the beginning of

Horses can be worked effectively only about eight hours a day five or six days a week, and must be turned out to grass a month or two every year. Barring accidents, the electric dynamo can be operated-and in the railroad and general electric lighting and power-house service, often is operated-from sixteen to twentyfour hours in the day, almost always six and sometimes seven days in the week continuously. Thus it will be seen that the dynamos are doing quite as much of the country's work to-day as the horses. Ten years from now, probably, they will be doing twice as much. The development of electric power is going on more rapidly this year than ever, and is limited only by the capacity of the establishments that

The great bulk of the country's electric and about the metropolis. development has taken place in the last twenty years; practically all of it in date a million horses, with yards, harness of a surplus as much as possible. Nattwenty-five, since the first working Edirooms, quarters for stablemen, &c., would urally he must keep posted on the for a large portion of the city of Colorade posses on a commercial scale was built in posses on a commercial scale was built in posses on a commercial scale was built in and a balf times the area of Central Park. according to the varying natural light. 1882. Both Edison and Brush had been and a half times the area of Central Park, according to the varying natural light. '70's; it frightened the horses in an evening military parade so badly that he long by 200 feet wide. It would reach keeps an anxious lookout from his winforced to stop the exhibitions of his new Jersey City.

The first commercial Edison station was set to work, not in one of the great Eastern centers of population, but in Appleton, Wis. It was a little, shanty-like structure, not over fifteen by twenty feet in size, its walls being made of upright that the stations now in operation, totals 250,000 horsepower, erected by the company first chartered to transform the weight of the great cataract's falling water into commercial power. Niagara's cause tens of thousands of hands all over the big city to reach up instantly and turn on the stations now in operation, totals 250,000 horsepower, larger than any other electrical development, including all the stations now in operation, totals 250,000 horsepower, larger than any other electrical development, the lights are turned off more stuff, battened. It contained a little dyname that could furnish current for 250 by a little water wheel.

No. 1, of the New York Edison Company, largest in the world, develops enough power to light 2,700,000 10-candle lamps, although 16-candlepower lamps are now the standard.

steam-electric units takes up more space than the entire space occupied by the little Appleton station, and develops about 320 times as much power. Yet the Appleton station and its water power plant-including dam and pond-must have ered as much space as the gigantic New York station, or more, since it occupie but one New York city block-a trifle

If the work done in this one powerhouse were done by horses it would take 125,000 acres to pasture them, were they all turned out at one time—almost six and live by the production of electric current live by the production of electric current live by the production of electric current live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the wells with an inverted live by the production of the well o each horse. As a matter of fact, it would 3,090. require twice or three times 125,000 horses to do the work done in this station. While are included in this throng. There is an a horse can do more work than the work architect and staff, including draughtsperiod, it could not begin to do so much cabinet makers, brick and tile layers, ma-

not to speak of the overload.

When the "peak of the load" is "on" at chemists to analyze the coal burned and night, a good deal more than 125,000 actual the oil that keeps the machinery running

only to the great public power stations. Most great machine shops, like the Gen- The "system operator" has been introeral Electric shops, have their own elec- duced in New York, Boston, and Chicago gines at Schenectady.

New York is the greatest electrical cen- where the laboring engines produces a ter in this country-in the whole world, constant uproar, from which, however, he for the matter of that. It has not only the is shut off by "sound-proof" partitions of biggest single power house, but several thick glass. Still, his long, balconylike others which are unmatched elsewhere. place of employment is by no means For instance, the station at Fifty-ninth quiet.

Only the older steam electric power sta
hydro-electric power plants, although it has been estimated that it would be feasi
How would you like it pishes the power to run the Subway, de-tions, fitted with slow-moving reciprocat- ble to develop 325,000 water horsepower of the ice trust?

velops 100,000 horsepower, and is being made larger. The elevated power station Conservative experts say it would take at Seventy-fifth street and the East River turned 72,000 horsepower into electrical "juice" when opened; the Metropolitan dynamos that are hauling the cars and (surface) Railroad powerhouse, at Ninetytrains, lighting the streets, the churches, sixth street, 75,000 horsepower, and both of the theaters, the homes, the stores, and these are being enlarged. The Kings- all the big electric stations, since the new turbine engines make little more racket the factories, hoisting the elevators, run- bridge station is another big one. The ning machinery, propelling automobiles, and doing all the other things to which horsepower station; the Brooklyn Rapid than so many clocks. At the present time Chicago has one of the biggest steam Transit Company another of approximately the same power; the New York Central's two stations, one on the Hudty-four millions of horses would be too few, and all agree that were it decided to try the impossible in substituting animal electric installations, one in New Jersey. power for the potent, invisible current, near the Hudson, and one in Long Island the equine population of the country City-the latter to supply the electric curwould have to be almost doubled before rent to the Pennsy's Long Island systemwill be monsters, while the Edison Water When the latest United States census was taken, in 1900, there were 21,203,901 horses and 3,435,523 mules including colts—

box side Station No. 2, now partly in operation, next door to No. 1, will make 160,000 eventually, and so on.

ing steam engines, and the newest, fitted would be were a thousand giants beating muffled kettledrums. Some time, how-ever, noise will be nearly eliminated from urbine power stations in the world. It is on Fisk street; it is almost as quiet as a church, and its present capacity is nearly 80,000 horsepower. Every one of New York's big stations has some turbines; Waterside, No. 2, and the new ones now building for the Pennsylvania, the Central, and the New Haven railroads have othing but turbines.

Has a Telautograph.

the waterfalls with electricity to do man's work in this country, the beginning is alnost startling in its magnitude.

All the big New York power stations now largest of its type anywhere, but it is posed regulations for controlling the procomplete and running were built and much greater in proportion to the sur-duction and distribution of the city's milk mostly equipped just before the introduction of steam turbines. Most of the ention of steam turbines. Most of the engines, therefore, are high pressure, upright reciprocating machines of 7,000 or 8,600 horsepower, coupled direct to the dynamos. When half a dozen of these machines are at work at once the result is not unlike what you might imagine it is not unlik Ultimately 60,000 horsepower is to be pro-

and under rivers to San Francisco, twenwheels run under very high heads- credit the practicability of the test. mostly from 1,000 to 1,500 feet.

Only one other higher head has been delong, 125 feet wide, and 100 feet high. He between one-third and one-half mile verhorses and 3,435,523 mules, including colts—
less than 25,000,000 beasts of burden in the country all told. Allowing for a generous increase in the seven years, there cannot be more than 20,000,000 horses and mules in the country to-day, of which not more than 20,000,000 at the outside can be available for work at any one time.

#### DR. MELVIN EXPLAINS TUBERCULIN TEST.

In The Washington Herald of July 2

sure of 85,000 volts, to Los Angeles. This gard to it, and also show that they have continent. When the second journal was Milan. The Parkersburg man was inis the longest transmission of so much power at such high pressure in the world. In the power at such high pressure in the world. one who knows that some thirty-six hours personal journalism prevailed the rivalry famous romanticist to leave town. Again, in Northern California 50,000 are required for the proper application of among newspapers took the form of edihorsepower or more is being generated the tuberculin test, the repeated suggestorial abuse of the enemy, but when the day and night away up in the Sierra tion that this test, in order to be effective, modern newspaper came into being, the in a city on the Ohio left school and went range, at the three centers, Folsom, Colgate, and Electra, for use at distant
only appear absurd. I challenge this portorial page to the news columns and the
was Jake. There was a hardened gang points. Some of this current is carried tion of their interview, and assert that no circulation statement. The deliberate of fakers doing police news at that time proof can be furnished in its support from newspaper hoax was born of the bitter and they had a large organization of lawty-three miles away. It is distributed any authentic source. It is evident that fight between newspapers of one class yers and physicians who would "stand over sixteen counties and the water" this inference is made primarily to dis-As a matter of fact, no one familiar

13 per cent of the entire country's electrichange in demand anywhere, and by the just before the water is delivered is 900 it is so certain to give warning whenubercle germs have been brought into tarians in their hope that tuberculosis may ultimately be eradicated from the erds supplying milk to our cities. And t is evident that if a herd is free from the disease, it will remain free so long as cleanliness in the care of the stables and caution in buying new members for the herd succeed in keeping these deadly germs from the premises.

> Cattle that are inoculated with large numbers of virulent tubercle germs, for experimental purposes, may withstand the will be taken up by natural infection due to keeping cattle in contaminated stables to keeping cattle in contaminated stables or with tuberculous companions, it must be employed on the staff of the New York evident that tuberculosis will not develop to any serious extent in the interim between tuberculin tests as recommended. When the serious extent in the interim between tuberculin tests as recommended. When the serious extent in the interim between tuberculin tests as recommended. When the serious extent in the interim between tuberculin tests as recommended. When the serious extent in the interim between tuberculin tests as recommended in the serious extent in the interim between tuberculin tests as recommended. tween tuberculin tests as recommended by the Agricultural Department.

Very respectfully

### GIVE THEM OUR MARKETS.

Only Way to Quiet Discontent in the Philippines. From the New York Journal of Commerc

Spain under our control must be re- worked by newspapers of to-day to trap act counterpart of the fiesh of cattle. By stored unless we are willing to see them a pirute sheet. continue to be a source of expense to When Horace Greeley's New York Tribourselves and a constant breeding ground une was young and good "copy" was for political disturbance. There would hard to get, its distinguished editor derful vegetable, be far less apprehension of trouble with sought to cater to the literary tastes of other nations regarding the islands if his readers by publishing serially Mr. conditions were made such that they Dickens' novel "Barnaby Rudge." would rather continue under our management than under that of some other foreign power. From a military standpoint, the danger in the Philippines is story paper of the country. The Ledger, was dated to get their exposed position so much as it like all weekly managines was dated to get their exposed position so much as it like all weekly managines was dated to get their exposed position so much as it like all weekly managines was dated to get their exposed position so much as it like all weekly managines was dated to get their exposure that Robert Barnaby Ruage. This was all well enough except that Robert Bonner had been put to great expense to get "Barnaby Ruage. This was all well enough except that Robert Bonner had been put to great expense to get "Barnaby Ruage." not their exposed position so much as it like all weekly magazines, was dated name that could furnish current for 250 cities. Chicago uses more than 500,000- first warning of a coming cloud the oper- foot-deep wheel pits and not at the top, lamps of 10-candlepower. It was operated horsepower, Philadelphia more than 350,- ator signals the chief engineer of the ag they are at Niagara and at Rochester. ment in this country—and elsewhere generally.

Seattle gets electric current also from water power stations that are operated on the streams fed by melting glaciers at the foot of Mount Rainier. This plant will deaper and permanently large party of malcontrol of Mount Rainier. This plant will deaper and tents willight to listen to plans for calling. velop 20,000 horsepower ultimately, and tents willing to listen to plans for calling than that of the Ledger? Instead of the passurance that the Chinese imperial has been in operation three years. Og- in outside interference when opportunity Tribune being guilty of theft, the Ledger maritime customs service is at last to be

situated on the East River, from Thirty- on gradually at first, and then acceler- dro-electric development has been put in American markets. This is perfectly with the goods." but one New York city block—a triffe more than an acre of ground. Inside the six-story red brick station building which six-story red brick station building which never shuts down. It takes 460 men to demand is heavy and sudden both engineers to Thirty-ninth street, like practically every public power house, demand is heavy and sudden both engineers shuts down. It takes 460 men to demand is heavy and sudden both engineers shuts down. It takes 460 men to demand is heavy and sudden both engineers shuts down. It takes 460 men to demand is heavy and sudden both engineers shuts down. It takes 460 men to demand is heavy and sudden both engineers shuts down. It takes 460 men to demand is heavy and sudden both engineers shuts down. It takes 460 men to demand is heavy and sudden both engineers shuts down. It takes 460 men to demand is heavy and sudden both engineers to the big machine as in other parts of that State, and in there are obscure influences constantly demand is heavy and sudden both engineers to the big machine as in other parts of that State, and in there are obscure influences constantly demand is heavy and sudden both engineers. The movement of the big machine as in other parts of that State, and in there are obscure influences constantly demand is heavy and sudden both engineers. The movement of the big machine as in other parts of that State, and in there are obscure influences constantly demand is heavy and sudden both engineers. The movement of the big machine as in other parts of that State, and in the constant the movement of the big machine as in other parts of that State, and in the constant the movement of the big machine as in other parts of that State, and in the constant the movement of the big machine as in other parts of that State, and in the constant the movement of the big machine as in other parts of the b ment toward better treatment for the merely for fun. The most prolific source established there much sooner had it tensive and serious efforts that have been made by the War Department to demonmade by the War Department to demon-strate the absence of any danger to Middle West until a few years ago. Mul-frontier, and, of course, for Japan's natsion of Philippine sugar on a more favor- the biggest liar in the world, and he houses be set up against her until they able basis, other departments seem disposed to reiterate statements that have been again and again disproved. For instance, the Bureau of Manufactures in trade reports, calls attention to the possibilities of making the islands "produce ten-fold their present output of sugar" keys to work breaking hemp. Mr. Guthrie that region open to the chiefs customs serve the consular and the chiefs customs serve the trade reports, calls attention to the possibilities of making the islands "produce solved the labor problem by putting months." period, it could not be described to do so much some severy day, whereas nearly all the energy developed in this station is used during a large percentage of every twenty-four hours, excepting on Sunday, whereas nearly sons, painters, lathers, plasterers, &c. There are stokers, ollers dynamo tenders, sible "overload" for ten or fifteen minutes being 100 per cent. Sometimes the increase will be 2,000 horsepower a minute for twenty minutes or more.

Deriods, to 10,000 or even 20,000, then possible "overload" for ten or fifteen minutes being 100 per cent. Sometimes the increase will be 2,000 horsepower a minute for twenty minutes or more. for twenty minutes or more.

You might suppose that there would be dream then, and the first really practiance of such statements in a government a general dimness of light for a few minhorsepower is developed at Waterside, smoothly, hello men and girls to work the utes at least in such a case, but this rare-twenty years ago in Richmond, Va., only one example of the way in which the immediately invitate the property of that profitable field in second or the property of that profitable field in second or the profitable field in Number 1, and a big percentage of it all private telephone lines between the chief by or never happens. The big power sta-Number I, and a big percentage of it all day, on the clearest summer day. A huge percentage of New York's machiners, switchboard personal substations, an electrical surples of the devices used, and substations, an electrical surples of the devices used, and Maurice perintendent, chief engineers, switchboard operators and assistants, and last, but perintendent, chief engineers, switchboard operators and assistants, and last, but perintendent operators and assistants, and last, but perintendent, chief engineers, switchboard operators and assistants, and last, but perintendent, chief engineers, switchboard operators and assistants, and last, but perintendent, chief engineers, switchboard operators are distributed among the substations and substations, an electrical surples of the devices used, and Maurice flynn, once a well-known New York more than difficult to secure a destributed among the substations. Into these reservoirs surplus operators and assistants, and last, but pertor to menting.

Big Power Plants,

In this country private electrical plants are put out in the morning.

Big Power Plants,

In this country private electrical plants are operated in the conduct of every conceivable sort of business. Some of the increase of the devices used, and Maurice flynn, once a well-known New York more than difficult to secure a consistent. Unwillingness to meet the commercial plants of the Philippine question. It seems to be printendent, chief engineers, switchboard and substations, an electrical such and substations are vast storage battery and others are distributed among the electric "junte" electric "junte" he work until forced to stop. There was no loafing on the job, to alking on the job, to alking on the printendent, chief engineers, switchboard in the configuration of the printendent, chief engineers, switchboard in the printendent, chief engineers, switchboard in the configuration. It seems to be the wo ceivable sort of business. Some of the ing to conditions, and is controlled as on by the system operator's order, and largest of them are run by the big steel completely by them as the men are by thus the flow of current is kept steady down in 1890 or 1891; after that electric when the Philippine tariff question is until the stokers can get up steam enough traction began to grow like corn under again referred to it, as it will be, next when he is a faker, is the country corre-

### "SLICE DAT MELON!"

Bout de ole mule a-kickin' out de cyart; Slice dat melon ter de heart!)

Hit's a wori' o' tribulation fum de daytime ter de night, But you got ter take yo' task en play yo' part; En de only song dat's makin' tribulation take his

flight, Is "Slice dat melon ter de heart!"

## Famous Newspaper Fakes

Ey FREDERIC J. HASKIN.

in the matter from the same source. To immediately precipitated. As long as the angry citizens of Milan forced their The New York "system operator" can veloped anywhere. This is at the foot of see the entire generating room, 275 feet Pike's Peak, where a head of 2,200 feet, retesting a cow until after at least six the demand for news, and at the same stories while they amused themselves. time escape the tiresome "leg-work" nec-

Richard A. Locke wrote the first great give down under the strain. He had reewspaper hoax for the New York Sun. been a Confederate soldier, ed by this agent, but when properly used it is so certain to give warning whenever this disease is present that a cow which fails to react to its application under normal dairy conditions may, with perfect assurance, be considered free from tuberculesis. Such being the case, size to be taken from the supplement to the Edinburgh Philosophical story of a man who fell in a faint on the street, and was taken to a doctor of ound that there was a foreign substance pressing on the man's heart. He cut in, found it was a bullet, removed it, and the man revived. The story then told how the bullet which was the properly used in the supplement to the Edinburgh Philosophical story of a man who fell in a faint on the street, and was taken to a doctor of ound that there was a foreign substance pressing on the man's heart. He cut in, found it was a bullet, removed it, and the man revived. The story there is a properly to the Cape of Good Hope the cape of t tuberculosis. Such being the case, she and there leveled it on the moon. The in- the cause of the trouble had been shot annot develop the disease until living habitants of the moon were plainly to into the man's side by a Federal gun be seen, being half way between a man in some civil war battle, when the old ther system, and this fact is one which and an orang-outang, and having wings fellow was serving with the Texas affords such great confidence to the sanitarians in their hope that tuberculosis technical phrases and had the stamp of many ultimately be eradicated from the relatific style. clentific style. Next day the staid Sixpenny Press swal- the doctor, a wise one, gave them ad-

owed the bait, hook and all. One editor ditional details. declared that he also had received dispatches telling of Sir John's great discoveries in the moon, which would be given to the public as soon as possible.

The received dispatches telling of Sir John's great discoveries in the moon, which would be given to the public as soon as possible. The editor of the Albany Advertiser de- Ranger?" Jake confessed that he had clared he read "with unspeakable emotions of pleasure and astonishment" of gentleman, "Jacob," continued the old tions of pleasure and astonishment" of gentleman, "Jacob, I knew him well. I the Herschel discoveries in an Edinburgh was standing by his side when he was experimental purposes, may withstand the attacks of the bacilli for months; and when the source of infection is limited to the relatively small number of germs that scientific journal. The hoax deceived shots I am going down to the doctor's house to see him." The son persuaded the father not to go, but it was Jake's last fake. Bennett of the Herald.

Tuberculin is not infallible, and it is not The deliberate setting of a trap to catch ing boat. claimed to be by its most ardent advo-cates, but it is claimed to be infallible in from the sedate Sixpenny Press, and was or per cent of the cases tested by qualified men, which percentage is based upon test records of thousands of animals. Can man himself claim a higher degree of infallibility; as without the assistance of this agent but a small percentage of the cases of tuberculosis in castle and many the sedate Sixpenny Press, and was mythical scientist in Virginia, the accounts of whose inventions have more than once caused the mail of the Richmond Times-Dispatch to overflow. They nouncing the arrival of the vessel, and the following the accounts of whose inventions have more than once caused the mail of the Richmond Times-Dispatch to overflow. They nouncing the arrival of the vessel, and was mythical scientist in Virginia, the accounts of whose inventions have more than once caused the mail of the Richmond Times-Dispatch to overflow. They aid be giving a summary of the news of Europe does not give his name. A sp which she had brought over. A few the solemn announcement of Capt. Honey-Journal office. Then the regular edition of certain soll had a very meaty taste The market which the Philippines lost had not come, and the news was faked. the exact taste of beef, but it resembled when they passed from the hands of Many similar incidents are told of tricks it in texture, and was chemically the ex-

The only way to place the Philippine plot galley-west. The Tribune faithfully

He declared that Mr. James Guthric, a extension of the Chinese customs serv-

had been in Africa, where he found a goods free of duty or at lower rates than family of monkeys in which the imitative were charged against the sea-borne comfaculty was highly developed. They were merce of the rest of the world. strong and healthy, and Mr. Guthrie was one of the means by which Russia brought, several of them back to Kentucky. It was necessary only to show the and other commerce from Northeastern

Fakes are not all fabricated by fly city reporters. The greatest faker of them all. spondent. The city reporter must exercise some care. His tales may be investigated by his own city editor, and they are certain to be looked into by other city edismall village who corners the correspondence for all the city papers may prevari-Slice dat melon ter de heart!)

Atlanta Constitution. | Va.) correspondent, and another a partial in Tennessee, a few years ago created natural.

A young man of a prominent family tional "fake," as a wholly untrue or a promising youth with a lively imaginagrossly exaggerated news item is called tion, and after teaching him the rudin newspaper slang, was born of the de- ments of the ethics of the game as they sire of the reporters to keep up with played it, they set him to inventing Jake did nobly for a week or two.

Then his young imagination began appeared January 10, 1833. The article Ranger. He had heard the war stories urported to be taken from the supple- over and over agin. So he wrote a

Nine years later Edgar Allen Poe was Sometimes a news faker wastes the ma-"Astounding News by Express via Nor-folk! The Atlantic Crossed in Three large bundle of toy balloons. The peddler In the human subject, is a disease of slow, insidious invasion. It will not develop in the healthy cow overnight, as does smallpox or scarlet fever in man, or between the morning and evening milking hours, and the drip herd which fails to react to yearly tuberculin tests may safely be considered free from tuberculosis with its attendant dangers and loses. The sound is a strong wind believed by the public, but the other new papers had begun to fear the inventive genius of the Sun staff, and they did not bite.

Mason's Flying Machine!!!" The article told of the adventures of Mr. Mason and seven the balloons went up in the seven the seven others, who set out from England in the steering balloon "Victoria," and shouled to her to hold on. A strong wind blew the balloons out to sea. The life-savers manned their boat, and rowed out under the balloons, keeping up with the wind. Then came Dead Shot Pete. He unlimbered his Winchester and punctured one balloon at a time letter. gradually and gently down into the wait-

> Capt. Honeybrain is the name of a copies of this paper were left on the door brain's beefsteak plant. The great scisteps in the neighborhod of the rival entist found that tomatoes growing in the Courier was printed without the Ajax news. The Journal found the papers, suspected nothing, and printed in large display the supposed types Atlantic news. display the supposed trans-Atlantic news ing, until at last the beefsteak plant had received by the Ajax. Of course the Ajax been created. Not only did the fruit have varying slightly the methods of culture, round, or any sort of steak. Hundreds of people wrote to inquire about this won-

> > To-morrow-Straws in the Trade

EQUAL RIGHTS IN CHINA.

End to the Monopoly of Trade Established by Russia.

From the New York Tribune. dissatisfied with the commercial and in-dustrial outlook. Improve that outlook Wednesday. Mr. Greeley's paper pub-of the long struggle for the equal rights has been in operation three years. Ogden and Salt Lake City, in Utah, are
furnished with electrical currents from ance to American administration in the "Barnaby Rudge" in which he turned characters upside down and knocked the characters upside down and knocked the long insisted upon arrogating to herself problem definitely on the road to set-reprinted it. Then the Ledger exposed and placing all nations upon equal terms tlement is to give the islands access to the steal and the Tribune was "caught in their commercial intercourse with Philippines. Notwithstanding the exof "whoppers" for twenty years was Joe not been for Russia's reluctance to ac-American sugar-growers from the admis- hatton gloried in the reputation of being ural and proper refusal to let custom-

The Spread of Hallucinations,

From the New York Evening Post. The dreaming of dreams and the seeing of visions is getting to be looked on by some as a mark of distinction in the dreamer and the visionary. There seems tors. He must lay grounds for his fake, to be a reversion to that sentiment of or he will be caught. But the man in a primitive times when the seer was also the prophet and the leader. Hallucinations of various kinds have become the property of the educated as well as of cate to his heart's content. So fanciful the ignorant, Consequently, too much were the creations of one Minnesota coun- attention cannot be given by psycholotry correspondent that he was induced to gists to their causes. Joseph's brethren go to the city and enter the field of fic-tion. He has been writing very successful at his dreams; but their attitude is that stories "From the Tall Timber," signed which every scientific man should as-"The Lesueur Liar." A Parkersburg (W. sume in the present recrudescence of Va.) correspondent, and another at Milan, superstition concerning the pseudo-super-

## THREE ELECTRICAL PIONEERS.



Van Depoele,

power when finished.

The Biggest Power House.

The System Operator.



was arrested "for disorderly conduct" and from the edge of Philadelphia nearly to dows, but also studies the barometer and ersey City.

The largest electric power stations in the local weather office, which often nowhich water turns the dynamos are at tifies him when a heavy cloud is coming Niagara Falls, where there are two each from the West long before its arrival.

cal development outside of the largest gradually when it is clearing. At the generators are at the bottom of the 260-600, Boston quite as much perhaps, St. boiler room to get ready for an increased To-day the Waterside Power Station, Louis perhaps 250,000, and so on down. call for steam by firing up such boilers No. 1, of the New York Edison Company, There isn't a city of 10,000 inhabitants in the world, develops enough the land without its electrical plants, the cloud actually comes the system operation. while hundreds of places of much less ator presses a button and the hoarse although 16-candlepower lamps are now the standard.

A single one of its 8,000-horsepower of the standard in electrical development. The largest gineer that he must give attention to steam-electric units takes up more space. nish a good deal less than 100,000-horse- what to do.

Have to Hurry.

Following these signals, the engineer Waterside Station, No. 1, in New York, starts the lubricating oil, lets the steam bines to 12,000 and sometimes, for brief

tor" works in the main station itself, foreseen largely, but a sudden storm will engines is going on more than twice fill the cars and increase the load, sometimes, with amazing rayidity.

engines is going on more than twice as rapidly as the introduction of electic traction.

Power of Falling Water. New York receives no current from any

build dynamos and their accessories to cal power, although less than 8 per cent proper use of his multifarious signaling pounds to the square inch, whereas steam of the country's population is located in devices he keeps the entire system well pressure of 250 pounds is rare. The water and about the metropolis. tunnel driven through the mountain from peak. The electric current produces lights experimenting some years before that, however, and Brush showed his first are light from a roof in Cleveland late in the velopment at Portland, Oreg., where street railroads are operated largely with urrent generated by water wheels forty miles away from the city, at Cazardero, on the Clackemas River. This installation ncreased to 25,000.

> meantime as possible. for which the largest dams in the world, built mainly to store water for electrical

purposes, have been erected. A particularly interesting form of hynot directly connected with the station the boiler room sometimes have to hustle force, being driven several feet in the itself. The two waterside stations employ and hurry as if the evil one were after air by the pressure from below. Some ina half townships, and 3,000 acres more in the two big stations and the substa- are making seventy-five revolutions a turbine water wheel and connecting it than Chicago's area-allowing an acre for tions, the number of employes is about minute, while the turbines are run up to up with a dynamo. This was done and 500. Often in such circumstances the stood that this scheme will be imitated Men and women of many occupations 8,000-horsepower vertical units work up to lin the East before long, as it undoubt-

Much Done in Recent Years.

fying their lines. No one who reads

An Alluring Thought.

has a head of from 138 to 151 feet, according to the stage of the water, and now velops 15,000 horsepower, which is to be Fine Plant Near Scattle. There is another interesting development at Snoqualmie Falls, some forty-eight

miles from Seattle, which develops 11,000 horsepower for that thriving town. The as they are at Niagara and at Rochester -the earliest big water turbine development in this country-and elsewhere gen-

Many who read this article can remem-

and enough units can be put to work to a hot July sun. To-day the big steam winter. supply the needed current direct from the roads are beginning the work of electritric plants. Its plant is of 25,000 horse-only. The Chicago "system operator"—frequently to railroad power stations, doubts that the steam locomotive will be sain't no time for talkin' bout de trouble what's power, 10,000 produced by water wheels at known as the "load dispatcher"-is not since the load varies according to the eventually be sent to limbo on all but Spier Falls, forty miles away, on the located in the station, but at the general hours of going to and from work, the be- lines whose traffic is small, while the Upper Hudson, and 15,000 by steam en- office. In New York the "system opera- ginning and ending of theatrical perform- introduction of electric light and of elecances and the like. These changes can be tric motors in place of isolated steam

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